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anthracene with (plant or yeast)	32

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L1	anthracene with (plant or yeast)	32	L1

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L6 ANSWER 27 OF 27 CAPLUS COPYRIGHT 2002 ACS
AN 1948:32360 CAPLUS
DN 42:32360
OREF 42:6893b-g
TI The enzymic hydrolysis of hydrogen peroxide in **plant** extracts. Genetic and chemical influence on the enzyme formation
AU v. Euler, Hans
SO Arkiv Kemi, Mineral., Geol. (1946), 24A(No. 13), 15 pp.
DT Journal
LA German
AB cf. C.A. 24, 1872. The enzymes which contribute to the synthesis of chlorophyll as well as to the catalase-hemins are influenced by inhibitors whose formation are genetically detd; Chlorophyll-defective mutants can be produced by x-ray irradiation. Diminishing catalase activity in chlorophyll-defective plants was investigated using barley-leaf exts. The leaves were ground and suspended in a pH 7.3 buffer and used as such for catalase detn. The av. reaction catalase const. (k) for 50 mg. normal, 10-days old barley seedlings was 0.083. The k for chlorophyll-defective seedlings was 0.015. By adding a heated ext. of seedlings to the reaction mixt. no inhibitory effect was observed. The k is not affected by inhibitors; the difference between k values of normal and chlorophyll-defective plants is not due to inhibitors. The genes responsible for the formation of the porphyrins must then be inactivated. It is indicated that these mutations are related to the nucleoprotein-enzyme systems. If the seeds are soaked in 25 or 40% heavy water for 25 hrs. prior to germination, it is observed that D delays the germination of the seeds. (Bonhoefer, et al., C.A. 30, 7131.1). The 40% soln. has a greater effect than the 25% soln. and the delay is greatest immediately after swelling which means that the effect is felt only as long as D is present in the seed as a reserve material or its immediate metabolites. It may be concluded that D has no lasting effect either on the structure or on the activity of the enzymes. The k of green leaves of D-treated seeds is after 6-days germination (30 mg.) 0.0122 and for H2O-treated seeds 0.0151. After 22-days germination k (30 mg.) is 0.0108 and 0.0124, resp. It was found impossible to differentiate between catalase activity of diploid and triploid plants (aspen). If pollen of a rye **plant** is chemically treated and the seeds developed from such plants are allowed to germinate, no clearcut picture is obtained as to leaf size or catalase activity. During a chem. treatment of pollen part of it is not attacked and behaves as normal pollen and part is affected and cannot cause any fertilization. The later development of such seedlings show great differences in leaf shape, which may be caused by **mutation**. Particularly effective in this respect was camphor, **anthracene**, and benzoquinone. In plants treated with these no ears of grain were developed.

L6 ANSWER 26 OF 27 CAPLUS COPYRIGHT 2002 ACS
AN 1971:84338 CAPLUS
DN 74:84338
TI Dithranol and dithranol-like compounds. II. Mutagenicity
AU Zetterberg, Gosta; Swanbeck, Gunnar
CS Inst. Physiol. Bot., Univ. Uppsala, Uppsala, Swed.
SO Acta Dermato-Venereol. (1971), 51(1), 45-9
CODEN: ADVEA4
DT Journal
LA English
AB Of 11 **anthracene** and anthraquinone derivs., dithranol (I) was the most effective in inducing respiration-deficient (RD) mutants in Saccharomyces cerevisiae. 1,9-Dihydroxyanthracene and 1,8,9-trihydroxy-3-methylanthracene also induced such mutants but to a lesser extent than I. After prolonged use, 1,8-dihydroxyanthraquinone (II) and 1,8-diacetoxyanthraquinone also induced a low but significant increase in the proportion of RD mutants. Compds. which induced RD mutants were all strong DNA binders in vitro. Anthraquinone derivs. were not as effective as anthracenes in RD induction, although many were strong DNA binders in vitro. The frequency of chromosomal mutations was not increased by treatment of **yeast** or Ophiostoma with I. The mechanism for the induction the RD **mutation** with these compds. is discussed and a hypothesis is presented to explain the antipsoriatic effect of I.

L6 ANSWER 24 OF 27 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.
AN 79251624 EMBASE
DN 1979251624
TI Toxic and mutagenic effects of carcinogens on the mitochondria of Saccharomyces cerevisiae.
AU Egilsson V.; Evans I.H.; Wilkie D.
CS Dept. Bot. Microbiol., Univ. Coll. London, London WC1 6BT, United Kingdom
SO Molecular and General Genetics, (1979) 174/1 (39-46).
CODEN: MGGEAE
CY Germany
DT Journal
FS 037 Drug Literature Index
016 Cancer
030 Pharmacology
004 Microbiology
LA English
AB Nineteen haploid **yeast** (Saccharomyces cerevisiae) strains were used to assess the relative growth inhibitory potencies on fermentable vs. non-fermentable media of a collection of carcinogenic and non-carcinogenic chemicals. The majority of carcinogens were distinctly more potent on the non-fermentable (glycerol) medium, where mitochondrial function is required for growth, than on the fermentable medium, where it is not. The anti-mitochondrial selectivity indicated by these growth tests was much slighter for the non-carcinogens. Similarly most carcinogens induced the cytoplasmic petite **mutation** whereas the non-carcinogens did not. Five carcinogens which were tested impaired the development of cytochromes aa(3) and b in glucose cultures. Six carcinogens, when tested, inhibited growth on three fermentable sugars, the utilisation of which requires mitochondrial function. Out of five carcinogens which were examined, four suppressed the surface-dependent phenomenon of flocculence in a flocculating strain of **yeast**, at concentrations primarily affecting the mitochondrial system; the fifth had a similar but less pronounced effect.

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(FILE 'HOME' ENTERED AT 16:47:14 ON 08 AUG 2002)

FILE 'MEDLINE, CANCERLIT, BIOTECHDS, CAPLUS, EMBASE, BIOSIS' ENTERED AT 16:47:30 ON 08 AUG 2002

L1	72829	S ANTHRACENE
L2	1253541	S HYPERMUTA? OR MUTATION OR MISMATCH REPAIR OR PHENOTYP?
L3	1769216	S PLANT OR YEAST
L4	1933	S L3 AND L1
L5	52	S L4 AND L2
L6	27	DUP REM L5 (25 DUPLICATES REMOVED)
L7	1580749	S ASSAY OR PCR
L8	115	S L7 AND L4
L9	71	DUP REM L8 (44 DUPLICATES REMOVED)
L10	54	S L9 AND PLANT
L11	1	S L10 AND PCR
L12	10	S L10 AND (DNA OR NUCLEIC OR GENE)

L6 ANSWER 17 OF 27 MEDLINE DUPLICATE 7
AN 88225041 MEDLINE
DN 88225041 PubMed ID: 3286249
TI Induction of mitotic chromosome loss in the diploid **yeast** Saccharomyces cerevisiae D61.M by genotoxic carcinogens and tumor promoters.
AU Albertini S; Friederich U; Wurgler F E
CS Institute of Toxicology, Swiss Federal Institute of Technology, Schwerzenbach ZH.
SO ENVIRONMENTAL AND MOLECULAR MUTAGENESIS, (1988) 11 (4) 497-508. Journal code: 8800109. ISSN: 0893-6692.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198806
ED Entered STN: 19900308
Last Updated on STN: 19900308
Entered Medline: 19880628
AB Three genotoxic carcinogens and eight tumor promoters were tested for induction of aneuploidy, specifically chromosome loss, in Saccharomyces cerevisiae D61.M. This is a heterozygous diploid **yeast** strain that permits the scoring of segregants expressing three linked recessive markers (cyhR2, ade6, and leu1), two of which (ade6 and leu1) are located close to the centromere on opposite arms of chromosome VII. The centromere marker leu was routinely checked, and a positive control (bavistan) was run with every experiment. The three genotoxic carcinogens aflatoxin B1, benzo(a)pyrene, and 7,12-dimethylbenz(a)**anthracene** did not induce aneuploidy, independent of the presence or absence of an exogenous metabolic activation system (rat liver homogenate; S9). Four of the eight tumor promoters tested induced chromosome loss but not mitotic recombination or **mutation**: cholic acid, lithocholic acid, phenobarbital, and saccharin. Diethylstilbestrol (DES) led to positive as well as to negative results in several independent experiments. In the case of the positive experiment, DES also induced putative recombinants. Three tumor promoters induced neither chromosome loss nor mitotic recombination: anthralin, 4,4'-dichloro-diphenyl-ethane (DDT) and gamma-hexachlorcyclohexane (lindane). From our experiments it can be concluded that the hypothesis put forward by Parry et al. [Nature; 294:263-265], according to which tumor promoters induce chromosome loss in **yeast**, is not correct in a general sense. In our set of eight tumor promoters, only one half distinctly induced chromosome loss.

L6 ANSWER 1 OF 27 CAPLUS COPYRIGHT 2002 ACS
AN 2001:753502 CAPLUS
DN 136:324416
TI Anti-mutagenicity of **plant** origin lactic acid bacteria isolated from rice and processed rice products
AU Kumagai, Takehisa; Seno, Kimiko; Watanabe, Toshiyuki; Okada, Sanae
CS Kameda Seika Co., Ltd., Kamedamachi, Nakakanbara-gun, Niigata, 950-0192, Japan
SO Nippon Shokuhin Kagaku Kogaku Kaishi (2001), 48(9), 693-696
CODEN: NSKKEF; ISSN: 1341-027X
PB Nippon Shokuhin Kagaku Kogakkai
DT Journal
LA Japanese
AB Nine strains of **plant** origin lactic acid bacteria were isolated from rice and processed rice products to exam. their anti-mutagenic effect. Tested Lactic acid bacteria were six strains of Lactobacillus casei subsp. casei and three strains of L. plantarum. Used mutagens were 3-amino-1,4-dimethyl-5H-pyrido-(4,3-b)-indole (Trp-P1), 3-1,4-dimethyl-5H-pyrido-(4,3-b)-indole (Trp P2), 2-amino-**anthracene** (2-AA), and N-methyl-N'-nitro-N-nitrosoguanidine (MNNG). Anti-mutagenic activity on living and killed cells of lactic acid bacteria were measured using Escherichia coli WP2uvrA. All strains showed anti-mutagenic activities against Trp-P1, Trp-P2 and 2-AA. The activity against Trp-P1 was higher than the other mutagens. Living and killed cells of lactic acid bacteria showed similar activity against Trp-P1 and Trp-P2. Four strains of killed cells of L. casei subsp. casei had higher activity than the living cell against 2-AA. Only living cells of L. casei subsp. casei had anti-mutagenic activities against MNNG. This result was similar to previous report using 4-nitroquinoline-1-oxide.